Lipid carriers for endothelial-specific delivery of siRNA

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Stellingen behorende bij het proefschrift / Propositions to the dissertation

Lipid carriers for endothelial-specific delivery of siRNA

From particle development to attenuation of inflammation

1. Inflamed microvascular endothelial cells are attractive target cells for siRNA-based pharmacological intervention in (chronic) inflammatory diseases. *(this thesis)*

2. Taking endothelial heterogeneity into account is crucial for the design of endothelial targeted siRNA-based therapeutics as upon inflammatory challenge each vascular bed display a unique make-up of potential target epitopes. *(chapter 2)*

3. VCAM-1 and E-selectin can serve as an efficient and specific entry route for siRNA delivery to inflamed endothelial cells. *(chapter 4)*

4. SAINT-C18 based liposomes (SAINT-O-Somes) are suitable carriers for functional *in vivo* delivery of therapeutic siRNAs to inflamed microvascular endothelial cells and attenuation of endothelial inflammatory responses. *(chapter 5)*

5. Establishing the true potential of siRNA delivery systems requires their validation in clinically relevant disease animal models and consideration of the ratio between the development costs and the therapeutic benefits of such approach. *(chapter 7)*

6. Physicochemical properties of various lipid formulations containing SAINT-C18 were as unpredictable as the gold medal for the Polish speedskater Zbigniew Bródka at the 1500 m event at the Winter Olympics in Sochi 2014. *(personal experience)*

7. Doing research resembles the Dutch weather, it is usually rough and cloudy but when the sun finally shines everyone enjoys the moment.

8. "If you don't love something, you're not going to go the extra mile, work the extra weekend, challenge the status quo as much." *(Steve Jobs)*

9. "The true sign of intelligence is not knowledge but imagination." *(Albert Einstein)*

10. "After all, science is essentially international, and it is only through lack of the historical sense that national qualities have been attributed to it." *(Marie Skłodowska-Curie)*

Piotr S. Kowalski, 2014